UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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ART UNIT	PAPER NUMBER
2127	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/740,418	MOODY ET AL.
	Examiner	Art Unit	
	Anh T Nguyen	2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _19 December 2000_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-46_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-46_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
   application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
37 CFR 1.78.

   a) ☐ The translation of the foreign language provisional application has been received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _2_.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

1. Claims 1-46 are presented for examination.

2. The listing of references in the specification is not a proper information disclosure

statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information

submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be

incorporated into the specification but must be submitted in a separate paper."

3. To insure proper consideration and to the extent required by 37 CFR 1.56, applicant is

required to supply a copy of the publication references cited in the specification because it is not

readily available to the examiner (see page 23, lines 4-36).

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

5. Claims 29-46 are rejected under 35 U.S.C. 101 because the claimed invention is directed

to nonstatutory subject matter where the claims recite a computer program product and is not

tangibly embodied on a computer readable medium (i.e. a computer program product stored in a

computer readable medium).

To expedite a complete examination of the instant application the claims rejected under 35

U.S.C. 101(nonstatutory) above are further rejected as set forth below in anticipation of applicant

amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention. The resulting claims do not clearly set forth the metes and bounds of patent

protection.

   A. The following terms lack proper antecedent basis:

   a. "said network" - Claim 1

   b. "said agent" - Claim 1, 19, and 29

   B. The claim language in the following claim is not clearly understood:

   a. As per claim 1,

   i. line 2, it is unclear what is being comprising (i.e. of resources and task

   execution, wherein the distributed data processing system comprising:)

   ii. lines 4-5, it is unclear whether "computers" in line 4 is the same as "a

   plurality of computers in line 6". (i.e. if they are the same then "the" or

   "said" should be used.

iii.   lines 5-7, recites "a plurality of computers connected to said network for

running programs thereon including a central authority and at least first and

second autonomous agents". This phrase is indefinite because it is unclear

whether applicant intends that each one of the plurality of computers to

include a central authority and at least first and second autonomous agents

or all of the computers of the plurality of computers include a central

authority and at least first and second autonomous agents.

b.   As per claim 42, line 2, it is unclear what is meant by "PN model".

Double Patenting

8.   The nonstatutory double patenting rejection is based on a judicially created doctrine
grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or
improper timewise extension of the "right to exclude" granted by a patent and to prevent possible
harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.
Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686
F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA
1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).
      A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to
overcome an actual or provisional rejection based on a nonstatutory double patenting ground
provided the conflicting application or patent is shown to be commonly owned with this
application. See 37 CFR 1.130(b).
      Effective January 1, 1994, a registered attorney or agent of record may sign a terminal
disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37
CFR 3.73(b).

9.   Claims 1, 19 and 29 are provisionally rejected under the judicially created doctrine of

obviousness-type double patenting as being unpatentable over claims 1, 22 and 36 of copending

Application No. 09/740,544 (hereinafter 544). Although the conflicting claims are not identical,

they are not patentably distinct from each other because both distributed data processing systems

comprise substantially the same elements of a communications network and a plurality of

computers including at least first and second autonomous agents wherein each agent employs the

associated graph to negotiate with each other. The difference between the 544 application and

the instant application is the claimed central authority which functions as the graph generator.

Although the copending application 544 does not claim the central authority, it would have been

obvious to one of ordinary skill in the art that each agent receives a graph associated therewith

from some entity such as the central authority.

This is a <u>provisional</u> obviousness-type double patenting rejection because the conflicting

claims have not in fact been patented.

Claim Objections

10. Claims 6-9 are objected to under 37 CFR 1.75(c) as being in improper form because

claim 6 is identical to claim 8 and claim 7 is identical to claim 9. See MPEP § 608.01(n).

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
patent by another filed in the United States before the invention by the applicant for patent, except that an
international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
subsection of an application filed in the United States only if the international application designated the United
States and was published under Article 21(2) of such treaty in the English language.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999

(AIPA) do not apply to the examination of this application as the application being examined

was not (1) filed on or after November 29, 200, or (2) voluntarily published under 35 U.S.C 122

(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by

the AIPA (pre-AIPA 35 U.S.C. 102(e)).

12. Claims 1-10, 19-23, 29-38 are rejected under 35 U.S.C. 102(e) as being anticipated by

Lee et al., USPN 6,263,358, hereinafter Lee.

13. As per claims 1, 19 and 29, Lee teaches the invention as claimed including a distributed

data processing system for controlling allocation of resources and task execution (Fig.2) and

comprising:

a communications network (**150**, Fig.1) for passing messages between computers

connected thereto (col.6, lines 17-18);

a plurality of computers connected to said network for running programs (Fig.1) thereon

including a central authority and at least first and second autonomous agents(col.9, lines 14-15);

said central authority (col.24, lines 41-42) generates a graph (**310**, Fig.3) associated with

each agent wherein the graph represents for the associated agent what resources that agent has

(**500**, Fig.5, col.14, lines 59-67; col.15, lines 1-2) and what task or tasks that agent may

perform(col.24, lines 65-67; col.26, lines 31-43);

each said agent employs the associated said graph to determine what resource or

resources are needed by that agent to carry out the task or tasks to be performed by that agent

(col.6, lines 30-35); and,

said agents negotiate with each other for the resources needed to carry out the task or

tasks to be performed by said agents (col.9, lines 17-23; col.15, lines 12-14 and 23-24).

14. As per claim 2, Lee teaches wherein said central authority generates said graphs from received data including data representing models of tasks mapped to task types (col.23, lines 44-49).

15. As per claim 3, Lee teaches wherein said central authority generates said graphs from received data including data representing number and type of resources (**225**, Fig.2, col.7, lines 36-37).

16. As per claim 4, Lee teaches wherein said central authority generates said graphs from received data including data representing types (col.26, line 35) and number of tasks (col.26, line 36).

17. As per claim 5, Lee teaches wherein said received data further includes data representing models of tasks mapped to task types and data representing number and type of resources (**500,** Fig.5, col.24, line 66-67).

18. As per claim 6, Lee teaches wherein said central authority receives data including data representing mission constraints including linear inequalities in terms of resources and tasks results (**1435**, Fig.14, col.40, lines 55-57).

19. As per claim 7, Lee teaches wherein said central authority generates supervisory control structure to enforce constraint dependencies based on received data including that representing mission constraints and said graphs (**510**, Fig.5, col.28, lines 19-20, 39-41).

20. As per claim 8, Lee teaches wherein said central authority receives data including data representing mission constraints including linear inequalities in terms of resources and tasks results (**1435**, Fig.14, col.40, lines 55-57).

21. As per claim 9, Lee teaches wherein said central authority generates supervisory control structure to enforce constraint dependencies based on received data including that representing mission constraints and said graphs (**510**, Fig.5, col.28, lines 19-20, 39-41).

22. As per claim 10, Lee teaches wherein said received data further includes data representing models of tasks mapped to task types and data representing number and type of resources (**500,** Fig.5, col.24, line 66-67) and types (col.26, line 35) and numbers of tasks (col.26, line 36).

23. Claim 19 is a method claim of claim 1. Therefore, it is rejected for the same reasons as claim 1 set forth hereinabove.

24. As per claims 20-22 and 30-31, they are rejected for the same reasons as claims 2-3 set forth hereinabove.

25. As per claims 23 and 35, they are rejected for the same reasons as claims 6-7 set forth hereinabove.

26. As per claims 32-34 and 38, they are rejected for the same reasons as claims 4-6 set forth hereinabove.

27. As per claims 36-37, they are rejected for the same reasons as claims 8-9 set forth

hereinabove.

Claim Rejections - 35 USC § 103

28. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

29. Claims 11-18, 24-28, and 39-46 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Lee et al., USPN 6,263,358, hereinafter Lee.

30. As per claims 11-12, 24 and 39-40, Lee does not explicitly teach wherein said central

authority assigns penalties for resource consumption and rewards for all subtask results based on

data received representing mission objectives. However, one of ordinary skill in the art would

have recognized that associating rewards with task results and penalties with resource

consumption would serve as a performance-enhancing tool to improve the overall efficiency of

the system.

31. As per claim 13, Lee teaches wherein said central authority receives data representing

locations of potential agent processors and locations of resources and potential task implementers

(col.8, lines14-15).

32. As per claim 14, Lee teaches wherein said central authority decomposes an overall model for distribution among the individual agents (**560,** Fig.5).

33. As per claims 15, 26 and 43, Lee teaches wherein said central authority determines if any agent has not received initial data and if not, then it sends the structure and initial conditions, task and resource mappings and the number and type of resources to that agent (col.25, lines 39-42).

34. As per claims 16, 27 and 44, Lee teaches wherein said central authority determines if any agents have not been updated and if so it sends to any such non-updated agent the resources, usage costs and task completion reward (col.25, lines 40-42).

35. As per claims 17 and 45, Lee teaches wherein said central authority receives incoming agent messages and provides user feedback (col.35, lines 12-13, col.33, lines 17-19).

36. As per claims 18 and 46, Lee teaches wherein said central authority determines whether the mission has been completed (col.7, lines 29-34).

37. As per claims 25 and 41-42, they are rejected for the same reasons as claims 13-14 set forth hereinabove.

38. As per claims 28, it is rejected for the same reasons as claims 17-18 set forth hereinabove.

39. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Smith USPN 6,088,732 and Temmyo USPN 5,283,896.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh T Nguyen whose telephone number is (703) 305-8649. The examiner can normally be reached on Monday-Friday from 7:00am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An, can be reached on (703) 305-9678. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-5484.

Anh T. Nguyen
Art Unit 2127
February 5, 2004

MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
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